



DELAWARE STATE FIRE MARSHAL'S OFFICE
TECHNICAL SERVICES
INSTRUCTIONS for
PRELIMINARY SPRINKLER FORM



This form is required to be completed for all buildings, additions, and renovations that are submitted to this Agency for permit, when an automatic suppression system is to be installed. A licensed sprinkler contractor, or a DE registered PE shall complete the form in a legible manner. The form shall accompany a floor plan sheet with the hazard classifications for each proposed area, and all concealed spaces shown. On the same sheet a site sketch showing the location of the test hydrants used for flow testing (both flow and pressure hydrant) are to be shown with all underground pipe to the building.

1. The name of the project or building, and the owner shall be the same as on the application. The owner's name shall be printed along with a signature of the owner as to the correctness to the submitted information (i.e. storage features, commodity being stored). The submitter of the form "Designer/ Company" shall be provided. The designer shall provide FMO license number and FMO Certificate number or their DE PE number.
2. Place a check mark next to the appropriate system or systems being installed/proposed. Then indicate the number of risers for each type of system to be installed/proposed. The system size shall be the square footage the system is to cover. For a new system state the total area the system will cover. For an add-on, state the number of square feet that the additional system will cover and the square feet that the existing system covers. For existing systems that will be upgraded state the number of square feet the system will/does cover.
3. Place a mark next to all proposed hazard classifications as they appear on the floor plan sheet provided. Unless otherwise noted, the Agency will assume the minimum design area for each hazard classification (light – extra hazard 2), but for rack sprinklers or storage areas the submitter shall state the density, area, height of rack or storage, and the commodity class for the storage. For storage, a letter from the owner shall be required to verify the material being stored, the aisle width, rack configuration, height of storage to the ceiling, and if the product is encapsulated or not. The Designer will note the sprinkler head temperature of the rack and ceiling sprinklers. If the system design mandates the number of sprinklers to be calculated, state the number of heads.
4. Place a mark by the type of sprinklers that will be used.
5. If standpipes are required or will be provided, place a mark on the appropriate line (yes/no).
6. If concealed spaces are shown on the floor plan, place a mark on the appropriate line (yes/no).
7. Areas that are NOT to be covered shall be explained clearly (*use additional paper if necessary*).
8. State whether or not a fire pump will be needed. If a fire pump is required state the size and driver (i.e. 1000 GPM @ 80 psi – Electric Motor).
9. Flow test data shall be current, within the last (1) year, and on the water utilities company letterhead. The flow hydrant and the pressure hydrant shall be shown on a site sketch with reference to the building and source, showing underground pipe layout and sizes. Note on the form the size, length, type, and all fittings that will be in the underground from the test hydrant to the system riser.
10. If a tank is to be used, the size will be needed in gallons.

11. State the estimated demand at the base of riser (BOR) of the most demanding system(s). This should be an approximation of how much water and pressure will be needed to satisfy the system demand including inside hose streams, outside hose streams, and the 10-psi safety factor. Finally we will need the adjusted estimated flow and pressure on the supply side of the BOR. State the water supply adjusted to the base of riser inside the building. These two numbers will then be compared to determine if enough water and pressure are available to supply the system. If the water supply is unable to meet or exceed the demand, a tank and/or pump may be required. Attach a Logarithmic graph ($N^{1.85}$) showing the adjusted water flow curve with the estimated sprinkler demand plotted, including hose streams and the 10-psi safety factor, under the curve.
12. The form shall be signed by the license holder of the Sprinkler Company or the DE Registered PE.

NOTE: *A complete submittal will have the form completed, and signed. Along with the form the following attachments shall be submitted:*

- *a $N=1.85$ graph for the flow test;*
 - *documentation of the flow test from the water supplier;*
 - *a floor plan showing the following:*
 - *hazard classifications of all areas,*
 - *areas that are not covered,*
 - *combustible concealed areas, and*
 - *a site layout showing underground piping from flow test point to the bottom of the riser at the building; and*
 - *for storage, the aforementioned items signed by the building owner.*
- Preliminary sprinkler forms that are incomplete, or non-compliant will cause the building plan to be "NOT APPROVED", thus no permit will be issued until corrections are approved.*

NO OTHER SUBSTITUTE TO THIS FORM IS ALLOWED